

What is claimed is:

- 1 1. A method for identifying pathogens, comprising:
2
3 providing an image;
4
5 processing the provided image with an image
6 segmentation algorithm to isolate at least one
7 segment of the provided image that has a feature
8 that is of interest; and
9
10 comparing the isolated segment of the provided image to
11 a plurality of reference images to determine if the
12 isolated segment corresponds to any of the reference
13 images.
14
- 15 2. The method according to claim 1 wherein the step of
16 providing the image comprises acquiring the image.
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- 18 3. The method according to claim 2 wherein the step of
19 acquiring the image comprises processing the acquired
20 image to provide pertinent portions of the acquired
21 image.
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1 4. The method according to claim 2 wherein the step of
2 acquiring the image comprises digitizing the acquired
3 image.

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5 5. The method according to claim 4 wherein the step of
6 acquiring the image further comprises digitally enhancing
7 the digitized image.

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9 6. The method according to claim 5 further comprises
10 storing the digitally enhanced image in a data storage
11 device.

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13 7. The method according to claim 1 wherein the provided
14 image comprises an image of a specimen.

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16 8. The method according to claim 1 wherein the provided
17 image comprises a dental x-ray.

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19 9. The method according to claim 1 wherein the image
20 segmentation algorithm comprises a recursive hierarchical
21 segmentation algorithm.

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23 10. The method according to claim 1 wherein the step of
24 comparing the isolated segment to the plurality of

1 reference images comprises:

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3 processing the isolated segment with a data mining
4 algorithm to extract particular image data from the
5 isolated segment; and

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7 processing the extracted particular image data and each
8 of the reference images with a optical recognition
9 algorithm to determine if the extracted particular
10 image data matches any of the reference images.

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12 11. The method according to claim 10 further comprising:

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14 providing a display device; and

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16 displaying the extracted data and the results of
17 processing the extracted image data and each
18 reference image.

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20 12. The method according to claim 1 further comprising
21 providing a data base having a plurality of reference
22 images stored therein.

23 13. A system for identifying pathogens, comprising:

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1 a device to provide an image;

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3 a data base having at least one reference image stored
4 therein; and

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6 an image processing resource to (i) process the
7 provided image with an image segmentation algorithm
8 to isolate at least one segment of the provided
9 image that has a feature of interest, and (ii) to
10 compare the isolated segment of the provided image
11 to the reference image to determine if the isolated
12 segment corresponds to the reference image.

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14 14. The system according to claim 13 wherein the device
15 comprises a device to acquire the image.

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17 15. The system according to claim 14 wherein the device
18 comprises a digitizer to digitize the provided image.

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20 16. The system according to claim 15 wherein the device
21 further comprises an enhancer device to digitally enhance
22 the digitized image.

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1 17. The system according to claim 16 further comprising
2 a data storage resource for storing the digitized images.
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4 18. The system according to claim 13 wherein the
5 provided image comprises an image of a specimen.
6

7 19. The system according to claim 13 wherein the
8 provided image comprises a dental x-ray.
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10 20. The system according to claim 13 wherein the image
11 segmentation algorithm comprises a recursive hierarchical
12 segmentation algorithm.
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14 21. The system according to claim 13 wherein the image
15 processing resource is configured to process the isolated
16 segment with a data mining algorithm to extract image
17 data from the isolated segment.
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19 22. The system according to claim 21 wherein the image
20 processing resource processes the extracted image data
21 and the reference image with a optical recognition
22 algorithm to determine if the extracted image data
23 matches the reference images.
24

1 23. The system according to claim 22 further comprising
2 a display device to display the extracted data and the
3 results of processing the extracted image data and the
4 reference image with the optical recognition algorithm.
5

6 24. The system according to claim 13 wherein the image
7 processing resource comprises a paralleling processing
8 resource.
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10 25. The system according to claim 24 wherein the
11 paralleling processing resource comprises a Beowulf
12 cluster.
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14 26. The system according to claim 13 wherein the device
15 comprises a video camera.